

8. Lipid Management

A. Primary Prevention

- Cholesterol - Desirable <200, borderline is 200-239, and high is >240
- Non HDL Chol - Optimal < 130 mg/dl
- LDL - Optimal <100, borderline is 131-160, and high is >160, very high >190
- HDL - Low < 40 mg/dl, High > 60
- Triglycerides - Good < 150, borderline 150-199, high 200-499, very high >500, critical >1000

- LDL goal is <160 if less than 2 risk factors
- LDL goal is <130, if 2 or greater risk factors for CAD.

- Risk factors DM, HTN, FH, Age (male >45, and female >55), cigarette smoker, HDL <40.
- HDL >60 is a negative risk factor and can be subtracted from the risk factors.

Primary Prevention Therapy: First Exercise and Diet

B. Secondary Prevention (ATP-3 Adult Treatment Program of May 2001)

- Best Goal is a Non-HDL Cholesterol of < 130 mg/dl
- Goal is an LDL < 100, HDL > 40, Triglycerides < 150

C. Etiologies: needing to be considered

Hypothyroidism & Nephrotic syndrome

High carbohydrate diets-Elevate Triglycerides, suppresses HDL

D. Physical Findings:

Xanthelasmas = Any type

Tendon Xanthoma = Type IIa, Familial Hypercholesterolemia,

Palmar Xanthoma = Type III, Familial Dysbetalipoproteinemia, IDL (beta-VLDL

Eruptive Xanthomas = Type IV, Familial Hypertriglyceridemia

E. Pharmacologic Treatments:

1. **HMG-Co A inhibitors** (Atorvastatin, Fluvastatin, Lovastatin, Pravastatin, Simvastatin)
 - Inhibiting synthesis of cholesterol, reducing hepatic cholesterol, stimulates of LDL receptors.
 - Primarily lower LDL can slightly raise HDL. High dose statins also lowers Triglycerides.
 - Side effects minimal, elevated transaminases, myopathy especially with Gemfibrozil
2. **Niacin/Nicotinic Acid** (NIASPAN) (Lovastatin & Niacin/ ADVICOR)
 - Lower LDL, Lower Triglycerides, effective medication at raising the HDL.
 - Side effects: Flushing, itching, elevated LFT'S, glucose intolerance, hyperuricemia, GI.
 - Contraindicated in chronic liver disease, caution in Diabetes
3. **Bile Acid Sequesters** (Colestevlam/WELCHOL, Cholestyramine, and Cholestipol)
 - Lower LDL and slightly raise HDL
 - Additive to patients already on HMG CoA's for still elevated LDL's
 - Side effects are mostly GI and causing problems with absorption of other meds such as Coumadin, Digoxin, Thiazides, Thyroxine, Vitamins, and Beta blockers.
 - Contraindicated for patients with markedly elevated Triglycerides.
4. **Fibric Acids** (Gemfibrozil/LOPID, Fenofibrate/TRICOR)
 - Increases activity of lipoprotein lipase, leads to decreased levels of Triglycerides
 - Generally used more for prevention of acute pancreatitis, rather than for CAD.
 - Side effects include gall stone, myopathy, GI, skin rashes, elevated LFT'S.
5. **Cholesterol absorption inhibitor** (Ezetimibe/ZETIA)
 - Reduce cholesterol-13%, HDL-0%, Tri-8%, LDL-18%,
 - Generally well tolerated

Total Cholesterol = HDL + LDL + (Trig/5)